REMARKS

Summary of Amendments & Status of Claims

Claims 4, 5, 20 and 25 remain as presented in Applicant's RCE-accompanying amendment of June 24, 2009. Claim 16 has been canceled, further to the claims canceled as of the June 24, 2009 amendment.

- **Claims 4, 5, 12, 13, 20 and 25-29 are pending.**

Claim Rejections – 35 U.S.C. § 112

Claims 13 and 16 were rejected for indefiniteness, because in fact claim 16 had become a duplicate of claim 13.

(The amendment of June 24, 2009 incorporated the limitations of claim 8 into claims 5 and 20, making it necessary to cancel claim 8; claim 16 depended from claim 8; revising claim 16 to depend from claim 5, which claim 8 had depended from, rendered claim 16 a duplicate of claim 13. Applicant's undersigned representative failed to realize that this redundancy had resulted, and thanks the Examiner for catching this error.)

Claim 16 has been canceled. It is believed that thereby the rejection under this section has been overcome.

Claim Rejections – 35 U.S.C. § 103

Claims 4, 12 and 25-27: Yoshimura et al. '705 in view of Santhanam et al. '209

Claims 4, 12 and 25-27 were rejected as being unpatentable over U.S. Pat. No. 5,009,705 to Yoshimura et al., in view of U.S. Pat. No. 5,364,209 to Santhanam et al.

The inventive coatings recited in independent claims 4 and 25, rejected under this section of the August 31, 2009 Office action, each are a compound thin film made up of a combination of one or more elements selected from the group Cr, V, Si and Al, and one or more elements selected from C and N.

Santhanam et al., meanwhile, discloses a PVD layer that may be a nitride or carbonitride of Ti, Zr or Hf (cf. column 2, lines 60-64). In making the rejection of claims 4 and 25 over *Yoshimura et al.* in view of *Santhanam et al.*, the Office alleges, "*Santhanam et al.* discloses the functional equivalency of Ti compound coatings to the coating of the claimed metal compounds."

The only possible support for this assertion would seem to be the statement appearing in two places in column 2 of the *Santhanam et al*. description, and recited similarly in the *Santhanam et al*. claims, that CVD layers forming the *Santhanam et al*. coating are "preferably a hard nitride, such as the nitrides of Ti, Hf, Zr, their alloys with each other and their alloys with other elements, and more preferably Ti, Zr or Hf nitride," (lines 32-34) and "carbonitrides of the alloys of Ti, Hf and Zr with each other and their alloys with other elements" (lines 46-48). Yet it is respectfully submitted that the blanket statement, "their alloys with other elements" does not *prima facie* amount to a showing in *Santhanam et al*. of "the functional equivalency of Ti compound coatings to the coating[s]" recited in independent claims 4 and 25 of the present application.

On the contrary, the materials of *Santhanam et al*. and of the present invention as recited in claims 4 and 25 are different; therefore combining *Santhanam et al*. with *Yoshimura et al*. fails to cure the deficiency of the *Yoshimura et al*. and consequently fails to meet the limitations of claims 4 and 25.

In particular, *Santhanam et al*. mentions chromium only as an optional additive to the cemented carbide substrate constituting their cutting insert (column 2, lines 21-23), and mentions vanadium only as a preferable additional ingredient of the substrate (column 2, lines 9-12). Silicon is not mentioned in *Santhanam et al*. at all; alumina, but not aluminum, coatings are discussed (column 2, lines 49-52).

Hence, it is respectfully submitted that *Santhanam et al*. is utterly silent as to coatings constituted from Cr, V, Si or Al, and C or N, and therefore that the Office has not made a *prima facie* case that *Yoshimura et al*. combined with *Santhanam et al*. meets the limitations of independent claims 4 and 25 and thus renders the claims obvious. For at least the foregoing reasons, it is believed that the rejection of independent claims 4 and 25 under this section is improper. By extension, the rejection of claims 12 and 27, which each depend from claim 4, and of claim 26, which depends from claim 25, is likewise believed to be improper.

Claims 5, 13, 16, 20, 28 and 29: Yoshimura et al. '705 in view of Vohra et al. '818.

Claims 5, 13, 16, 20, 28 and 29 were rejected as being unpatentable over *Yoshimura et al*., in view of U.S. Pat. No. 6,183,818 to Vohra et al.

The inventive coatings recited claims 5 and 20, rejected under this section of the August 31, 2009 Office action, each are an amorphous film of carbon only, formed by physical vapor deposition with solid graphite being the raw material. (Paragraph [0036] of the specification as filed notes that hard carbon thin films are amorphous.)

The *Vohra et al*. coatings, on the other hand, are crystalline diamond films, and the method of manufacturing the *Vohra et al*. coatings is, as set forth in claim 1 of the reference, to produce a film by plasma CVD employing methane, with the film production being at a high temperature of 700 to 850°C, as set forth in claim 9 therein.

Inasmuch as diamond is crystalline, and the coatings recited in claims 5 and 20 of the present application are completely amorphous, the coatings recited in claims 5 and 20 differ from the diamond films of *Vohra et al*. Consequently, regardless of whether, as the Office asserts under this section of the August 31, 2009 action, it would be obvious to provide the "hard carbon" coating of *Vohra et al*. on the substrate of *Yoshimura et al*., such a combination would not arrive at the present invention as recited in claims 5 and 20. That combination would result in a crystalline diamond film on a cemented carbide substrate, not in an amorphous hard-carbon thin film on such a substrate.

Hence, for at least the foregoing reasons, it is believed that the combination of *Yoshimura et al*. with *Vohra et al*. fails to meet the limitations of claims 5 and 20, and thus that the rejection of these claims is overcome. Likewise, the rejection under this section of pending dependent claims 13 and 28, which depend from claim 5, and of claim 29, which depends from claim 20, is believed to be overcome.

Conclusion

Accordingly, Applicant courteously urges that this application is in condition for allowance. Reconsideration and withdrawal of the rejections is requested. Favorable action by the Examiner at an early date is solicited.

Respectfully submitted,

November 5, 2009

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